

CURRENTLY — 1 OCTOBER 2026

1. **Mandar of Jharkhand Gets GI Tag — Source:** The Hindu — **GS-1:** Indian Culture | Tribal Culture | Traditional Musical Instruments | Intellectual Property Rights
2. **Flydubai Flight Incident: Courage and Sense of Duty — Source:** Firstpost — **GS-4:** Ethics | Courage | Sense of Duty | Selflessness | Presence of Mind | Leadership
3. **US Treasury Yields Hit 25-Year High — Source:** Economics / Graphs, Data, Perspectives — **GS-3:** Indian Economy | Financial Markets | Inflation | Fiscal Policy | Global Economy
4. **Southwest Monsoon Ends with 13% Rainfall Deficit — Source:** The Hindu — **GS-1:** Indian Geography | Monsoon | Climatology | **GS-3:** Agriculture | Water Security | Climate Variability
5. **Financing Rural Prosperity: From Farm Credit to Value-Chain Finance — Source:** The Hindu — **GS-3:** Agriculture | Agricultural Credit | Rural Economy | Food Processing | Value Chains
6. **CAFE-III: Strengthening India's Vehicle Fuel-Efficiency Standards — Source:** The Hindu — **GS-3:** Environment | Energy Efficiency | Energy Security | Automobile Industry | Climate Change



Traditional Instrument - Mandar of Jharkhand gets GI Tag



The traditional Mandar, deeply rooted in Jharkhand's folk culture and tribal life, has received official recognition with a Geographical Indication (GI) tag. Its traditional design, locally sourced red clay, distinctive craftsmanship and unique sound were key factors highlighted in the GI application.

1. Mandar of Jharkhand Gets GI Tag

GS-1: Indian Culture | Tribal Culture | Traditional Musical Instruments | Intellectual Property Rights

Context

The traditional **Mandar of Jharkhand** has received **Geographical Indication (GI)** recognition, bringing legal protection and greater visibility to an important tribal musical tradition of the State.

1. GI Tag: Basics & Significance

1. **Geographical Indication (GI)** identifies goods whose **quality, reputation or characteristics** are essentially linked to a particular geographical region.
2. In India, GI protection is governed by the **Geographical Indications of Goods (Registration and Protection) Act, 1999**.
3. Registration is administered by the **GI Registry, Chennai**, under the **Controller General of Patents, Designs and Trade Marks (CGPDTM)**, Ministry of Commerce & Industry.
4. **Significance:** GI recognition protects traditional products from **unauthorised use and imitation** and strengthens the collective rights of genuine producers.
5. It can promote **artisan livelihoods, market value, cultural preservation, tourism and rural economic development**.

2. Mandar of Jharkhand

1. **Mandar** is a traditional **double-sided percussion instrument** deeply associated with Jharkhand's tribal and folk culture.
2. It is used in **folk dances, festivals, religious ceremonies and community celebrations**.
3. Its regional identity comes from its **traditional design, locally available materials, craftsmanship and distinctive sound**.
4. It has been registered as "**Mandar of Jharkhand**" under **Class 15 (Musical Instruments)**; the application was filed by **Raidih Mandar Producer Company Ltd., Gumla**.
5. The recognition helps preserve **traditional knowledge and craftsmanship** while creating opportunities for the communities producing the instrument.

3. Important GI Tags of Jharkhand

- **Sohrai-Khovar Painting** — Hazaribagh
- **Jadupatua Painting** — traditional tribal art
- **Kuchai Silk** — traditional silk textile
- **Tussar Silk Sarees & Fabrics**

- **Dokra Craft**
- **Bamboo Crafts**
- **Tribal Jewellery**
- **Mandar of Jharkhand**
- **Jharkhand Benam** — traditional musical instrument

4. Important GI-Tagged Musical Instruments

- **Bobbili Veena** — Andhra Pradesh
- **Thanjavur Veenai** — Tamil Nadu
- **Narasinghapettai Nagaswaram** — Tamil Nadu
- **Miraj Sitar** — Maharashtra
- **Mandar** — Jharkhand
- **Jharkhand Benam** — Jharkhand
- **Himachal Ransingha** — Himachal Pradesh



TRENDING | Trump AI deal Gwadar Port Manchester

Flydubai flight scare: Who was the Indian pilot who fought off his colleague and saved 180 passengers?

Israeli media has identified Smith Machchhar as a pilot of Indian origin. Machchhar is a former SpiceJet pilot who joined FlyDubai in June 22. He was reportedly attacked by his co-pilot inside the cockpit of the aircraft during the mid-air incident

2. Flydubai Flight Incident: Courage and Sense of Duty

Source: Firstpost

GS-4: Ethics | Courage | Sense of Duty | Selflessness | Presence of Mind | Leadership

Context

A Flydubai flight from **Dubai to Tel Aviv** faced a serious mid-air emergency when a confrontation between the two pilots disrupted control of the aircraft. **Captain Smit Machchhar was injured**, but reportedly acted to open the cockpit door, allowing others to intervene and helping avert a potentially catastrophic outcome. The incident provides a contemporary example of **courage, duty and responsibility towards human life**.

1. The Problem: A Crisis at 30,000 Feet

1. A violent confrontation between the two pilots created a serious threat to the aircraft.
2. The aircraft began **rapidly losing altitude**, putting passengers and crew at immediate risk.
3. Captain **Smit Machchhar was himself injured** during the confrontation.
4. With control of the aircraft disrupted, immediate action was essential to prevent a major disaster.

2. The Response: Courage Under Extreme Pressure

1. Despite his injuries, Machchhar reportedly **opened the cockpit door**.
2. This allowed passengers and other crew members to enter and intervene.
3. The situation was brought under control, and the aircraft was diverted to **Tabuk, Saudi Arabia**, where it landed safely.
4. The response demonstrates how **individual courage combined with collective action** can help overcome an extreme crisis.

3. Ethical Values Demonstrated

1. **Courage:** Acting despite personal danger and injury.
2. **Sense of duty:** Giving priority to the safety of passengers entrusted to him.
3. **Selflessness:** Placing the welfare of others above personal safety.
4. **Presence of mind:** Taking a timely decision when normal circumstances had broken down.
5. **Responsibility:** Recognising the moral obligation attached to protecting human lives.
6. **Leadership:** Taking constructive action during a crisis rather than remaining passive.

US Treasury yields at 25-yr high: What are bond yields, what happens when they rise



GRAPHS,
DATA,
PERSPECTIVES
BYUDITH MISRA

WEEKLY ECONOMIC AND POLICY INSIGHTS USING DATA

THE YIELD on the 30-year US Treasury bond hit the highest level in around 25 years on Tuesday. This instrument is an IOU (I owe you) document used by the US government to borrow money from the market.

The yield denotes the return on investment that a lender can expect when lending the money to the government for a particular length of time. So a 30-year bond refers to a loan the government repays over that same period.

Governments borrow money for all kinds of durations, ranging from a few days to several years. As the chart shows, yields have been rising not just for long-term borrowing but across all durations.

Reasons

But why are bond yields going up? Doesn't the government say upfront how much it will pay? When a government borrows it stipulates an exact amount — called the coupon — that it will pay at the end of each year to the bondholder (or lender). But, government bonds, especially those issued by the US government, are heavily traded in the secondary market, and it is in this trade that yields start shifting.

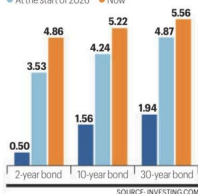
Imagine the US government floating a one-year bond of \$100 with a coupon of \$10. In other words, the lender will get \$110 at the end of the year. The rate of return is 10%. But suppose that soon after launching the bond, the US starts a war that spikes inflation — as it has done this year. Inflation basically means your money is worth less and less with the passage of time. As inflation starts to go up, it threatens to eat away or reduce the real value of that \$10 the lender was supposed to get at the end of the year.

In such a case, the lender will try to sell the bond in the secondary market before

Yields rising across durations

US treasury bond yields (in %)

● Five years ago (October 2021)
● At the start of 2025 ● Now



inflation completely ruins the returns, and use their money to invest in other places which pay a better return.

But given the rising inflation, other participants in the bond market may not be willing to pay \$100 for the same bond any more. Instead, they may offer a lower price. That's because at a lower price of the bond that same \$10 "yields" a higher rate of return at the end of the year.

As the price of the bond falls, based on what market participants demand as an acceptable rate of return, the yield rises. While this is not an exact example, it shows what has been happening lately. Investors are demanding higher rates of return in nominal terms because inflation is threatening to eat into real returns (the returns after taking away the effect of inflation). Apart from inflation concerns, just the sheer increase in the demand for loans (by governments and businesses around the world) is also pushing up what lenders want as returns.

Implications

Rising yields on US bonds have two broad implications.

ONE, it signals higher borrowing costs

for the US government. In other words, if yields on existing bonds are rising, the US government will have to match them when it goes to the market to borrow again. Like any other government, the US government, too, routinely goes to the market to borrow money — either to meet some new expenditure or to pay back old debt that is maturing.

Either way, higher borrowing costs typically imply that a larger portion of the US budget would have to be spent towards paying interest. That, in turn, leaves less money available for other priorities — say providing social security for US citizens.

Thanks to the US government's increased borrowing each year (called the annual budget deficit) pushing the pile of existing debt to over \$40 trillion as well as rising bond yields, the total annual outgo towards interest payments from the annual budget has ballooned from around \$600 billion before the Covid-19 pandemic to \$1.2 trillion as of 2025.

TWO, higher yields for the US govern-

ment also signal higher borrowing costs for every other government and business, including higher interest rates on home loans.

Since lending money to the US government is the safest lending one can do — because everyone believes the US government will always pay back and never default on its debt — if the yield on US government bonds rises, it typically means all other kinds of loans also become costlier. In other words, lenders demand even higher returns for giving loans to other governments and businesses since they are all riskier than lending money to the US government.

It doesn't help matters that this is not a US-only problem at the moment. Governments of most of the big economies have high levels of debt and even companies, especially in the artificial intelligence domain, are set to borrow heavily to fuel the next stage of their growth.

Higher borrowing costs across the board threaten to drag down economic activity, and that is why rising bond yields are bad news in the current context.

3. US Treasury Yields Hit 25-Year High: Understanding Bond Yields and Their Impact

Source: Economics / Graphs, Data, Perspectives

GS-3: Indian Economy | Financial Markets | Inflation | Fiscal Policy | Global Economy

Context

The yield on the **30-year US Treasury bond** has reached around **5.56%**, its highest level in about 25 years. Yields have risen across short-, medium- and long-term US government bonds amid **higher inflation concerns, rising borrowing demand and growing government debt**, increasing the cost of borrowing for the US government and businesses.

1. What Is a Bond Yield?

1. A **bond** is essentially a loan given by an investor to a government or company.
2. The **coupon** is the fixed interest that the bond promises to pay.
3. **Yield** is the return an investor expects from holding the bond at its current market price.
4. Bond prices and yields have an **inverse relationship**: when bond prices fall, their yields rise.
5. Example: if a \$100 bond pays \$10 annually, but its market price falls to \$80, the investor buying it gets the same \$10 payment on a lower investment, so the effective yield rises.

2. Why Are US Treasury Yields Rising?

1. **Inflation:** Investors demand higher returns when inflation threatens to reduce the real value of their future income.

2. **High borrowing requirement:** The US government is borrowing heavily to finance its fiscal deficit and refinance maturing debt.
3. **Large government debt:** Rising debt increases the amount of bonds that the government needs to sell in the market.
4. **Higher demand for credit:** Governments and businesses competing for funds can push up the return demanded by lenders.
5. **Investor expectations:** If investors expect higher interest rates or inflation in the future, they demand higher yields on long-term bonds.

3. What Does the Rise Mean for the US Economy?

1. **Higher government borrowing cost:** New US borrowing becomes more expensive as existing bonds mature and are refinanced.
2. **Higher interest burden:** More government revenue may have to be devoted to interest payments rather than public spending.
3. **Costlier private borrowing:** Treasury yields influence borrowing costs across the economy, including corporate loans and mortgages.
4. **Reduced fiscal space:** A larger interest burden can leave less money for welfare, infrastructure and other priorities.
5. **Economic slowdown risk:** Higher borrowing costs can discourage consumption and investment and weaken economic activity.

4. Why Does It Matter Globally?

1. **US Treasuries are a benchmark:** Their yields influence interest rates and borrowing costs across global financial markets.
2. **Capital allocation:** Higher US returns can make investors reassess investments in other countries and assets.
3. **Higher global borrowing costs:** Governments and companies worldwide may face greater financing costs.
4. **Debt vulnerability:** Countries and firms with high debt can face greater pressure when global interest rates remain elevated.
5. **Growth implications:** Persistently high borrowing costs can reduce investment and economic activity globally.

Monsoon ends with 13% rain deficit, driest year in a decade

Anjali Marar

Bengaluru, September 30

THE MONSOON season ended on Wednesday with a 13 per cent deficit in overall rainfall, the largest in more than a decade. India Meteorological Department (IMD) said rainfall over the country as a whole during the four-month monsoon season was 87 per cent of long-period average, or LPA.

In quantitative terms, India received 759.4 mm of rainfall against the LPA of 868.6 mm. LPA is the average rainfall received in the monsoon season over the 50-year period between 1971 and 2020.

The 13 per cent deficit makes this monsoon the driest in 11 years, the fourth driest in this century, and the 13th driest since 1901.

The last time seasonal rainfall fell below 90 per cent of LPA was in 2015, which was also affected by a strong El Nino in the equatorial Pacific Ocean. El Nino, which refers to an abnormal warming of surface waters in the equatorial Pacific Ocean, is known to suppress rainfall over India. The opposite phase, La Nina, when the surface waters are cooler than normal, generally favours good rainfall. This year, the developing El



Even as seasonal rain was reportedly below normal, several regions like Ghatat Town, in Paschim Medinipur in West Bengal, reported flooding following heavy rain. ANI

Nino is expected to turn into the strongest ever.

In the last ten years, there have been only two occasions when the monsoon rain has dropped below normal (96 to 104 per cent of LPA). In 2017, India had received 95 per cent rain while the following year it was 91 per cent.

Three of the four months of the season saw large deficits of rainfall. June had a deficit of more than 35 per cent, while August and September had shortfalls of 16.3 per cent and 76 per cent respectively. Only July received normal rainfall, about 1 per cent more than the LPA.

Punjab, Assam, Meghalaya

and Arunachal Pradesh recorded deficient rainfall throughout this season, while parts of Marathwada, Vidarbha, north Karnataka experienced prolonged dry spells through July, August and September, IMD officials said.

Over 38 per cent of the country's area, or 282 districts, received deficient rain while 312 districts received normal rain.

The impact of El Nino was expected to be stronger in the second half of the monsoon season. However, many areas of the country, except southern peninsular India, continued to receive normal to above normal rainfall.

The rainfall during June - September is also influenced by the Madden Julian Oscillation (MJO) and local low pressure systems. After June, there were several low pressure systems that developed in the Bay of Bengal and their subsequent landward movement maintained the rainfall momentum over many parts of central Indian regions.

"Rainfall activity continued due to the formation of low pressure systems. This year, there were 77 days against a normal of 57 days, when the country remained under the influence of low pressure systems," explained Mrutyunjay Mohapatra, director general, IMD.

MJO, which is a band of rain-bearing clouds with a periodicity of about 30-60 days, remained unfavourable over southern India.

"Being El Nino year, MJO could not contribute much to the seasonal rainfall. The influence of MJO on the rainfall over the southern peninsular is generally high," IMD chief said. All southern states have ended with deficit rainfall this season.

The ongoing El Nino is forecast to touch peak in November this year and the event is likely to cease by March 2027.

4. Southwest Monsoon Ends with 13% Rainfall Deficit

Source: The Hindu

GS-1: Indian Geography | Monsoon | Climatology

GS-3: Agriculture | Water Security | Climate Variability | Disaster Management

Context

The **2026 Southwest Monsoon** ended with **759.4 mm rainfall**, against the Long Period Average (LPA) of **868.6 mm**, resulting in a **13% deficit**. It was the **driest monsoon in 11 years**, with considerable regional variation.

1. Southwest Monsoon: Basic Understanding

1. **Meaning:** Seasonal reversal of winds that brings the bulk of India's annual rainfall.
2. **Onset:** Normally reaches **Kerala around 1 June** and advances northwards.
3. **Season:** Main rainy season is **June–September**.
4. **Branches:** **Arabian Sea branch** and **Bay of Bengal branch** distribute moisture across India.
5. **Withdrawal:** Begins from **north-western India around September** and progressively retreats during **October–November**.
6. **Importance:** Crucial for agriculture, reservoirs, groundwater recharge, hydropower and rural livelihoods.

2. What Happened in 2026?

1. India received **87% of LPA**, resulting in a **13% rainfall deficit**.
2. **June** had more than **35% deficit**; August and September recorded **16.3% and 7.6% deficits** respectively.
3. **July** was the only month with near-normal rainfall, about **1% above LPA**.
4. Around **38% of India's area**, covering **282 districts**, received deficient rainfall.
5. Punjab, Assam, Meghalaya and Arunachal Pradesh recorded deficient rainfall, while parts of Maharashtra, Vidarbha and north Karnataka experienced prolonged dry spells.

3. Why Was the Monsoon Deficient?

1. **El Niño:** Warming of the equatorial Pacific can weaken monsoon circulation and suppress Indian rainfall.
2. **Madden–Julian Oscillation (MJO):** Its phase and location influence tropical convection and rainfall distribution.
3. **Low-pressure systems:** Bay of Bengal systems transport moisture inland and strongly influence rainfall.
4. There were **77 days** influenced by low-pressure systems against a normal **57 days**, but their timing and distribution could not offset earlier deficits.
5. **Uneven rainfall:** A deficient seasonal total can coexist with intense rainfall and floods in particular regions.

4. Implications

1. **Agriculture:** Rain-fed crops are vulnerable to prolonged dry spells and irregular rainfall.

2. **Water security:** Lower rainfall can reduce reservoir levels and groundwater recharge.
3. **Food prices:** Poor agricultural output can increase pressure on food inflation.
4. **Rural economy:** Lower farm production can affect rural income and employment.
5. **Hydropower:** Reduced reservoir inflows can affect hydroelectric generation.

5. Way Forward

1. Strengthen **district-level monsoon forecasting** using El Niño, Indian Ocean Dipole (IOD), MJO and other climate indicators.
2. Promote **drought-resistant crops, crop diversification and micro-irrigation**.
3. Expand **rainwater harvesting and groundwater recharge**.
4. Develop **district-specific agricultural contingency plans** for delayed or deficient rainfall.
5. Improve management of both **drought and extreme rainfall**, since seasonal deficiency can coexist with local flooding.

How to finance rural prosperity

India's agricultural transformation is one of the greatest achievements of independent India. Over the past six decades, the nation has emerged as one of the world's largest producers of cereals, milk, fruits, vegetables and fisheries products. This progress was driven by visionary public policy, scientific innovation, irrigation, institutional credit and the enterprise of millions of Indian farmers.

While India's first agricultural transformation delivered food security, the next must deliver rural prosperity by enabling rural India to capture a larger share of the value created after harvest. Every agricultural commodity passes through a value chain from production to aggregation, storage, logistics, processing, branding and markets. It is along this chain that enterprises emerge, employment expands and prosperity grows. Financing this change requires moving past production credit towards financing the entire agricultural value chain.

Dairy, poultry and fisheries operate through continuous procurement and marketing cycles, generating predictable cash flows, lower inventory risks and regular working-capital turnover. However, seasonal commodities operate under a very different financial reality. Processors need to procure most of their annual raw material requirement within a short harvest window and finance inventory for the remainder of the year. A company investing ₹500 crore in a modern processing facility may require ₹700-₹800 crore simply to procure, store and carry seasonal inventory.



Sanjay Agarwal

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While India's first agricultural transformation delivered food security, the next must deliver rural prosperity by enabling rural India to capture a larger share of the value created after harvest

Without appropriately structured working capital, even efficient enterprises struggle to remain commercially viable. While the sugar sector is also seasonal, its growth demonstrates how inventory finance and warehouse-backed lending can overcome seasonal constraints. The difference in sector growth lies not in production potential but in the way the chain is financed.

Need for new mechanisms

For more than five decades, successive reforms including bank nationalisation, rural banks, cooperative institutions and the Kisan credit card expanded production credit. India has successfully built robust institutions for financing agricultural production when national food security was the priority. It must now build robust mechanisms for financing every commercially viable activity that creates value between the farm and the final consumer.

Encouragingly, elements of such a financing ecosystem are already emerging. Banks have introduced products such as warehouse receipt financing, receivables financing, and financing for food processing and agricultural infrastructure, while agri-focused non-banking financial companies have pioneered innovative value-chain models. However, these remain isolated initiatives rather than components of a comprehensive agricultural value chain financing architecture.

The opportunity is substantial. Based on the difference between the GVA (Gross Value Added) of agriculture and allied sectors (₹48.8 lakh crore) and the institutional credit flow (₹20

lakh crore) during 2023-24, indicative estimates suggest that the financing opportunity across India's agricultural value chains could exceed ₹14 lakh crore.

While only about 10-12% of agricultural produce is processed in India, the corresponding level is estimated at around 35-45% across East, South and Southeast Asia and often exceeds 60% in many developed economies. In these economies, agricultural transformation is supported by financing systems aligned with commodity-specific value chains rather than production alone.

A comprehensive agricultural value chain financing framework should provide a diverse portfolio of financial instruments, including product finance, receivables finance, warehouse receipt finance, risk mitigation solutions and credit enhancement mechanisms. These instruments can finance the flow of goods, services and capital across the value chain, with financing decisions increasingly based on commodity-specific value chains and cash-flow analysis rather than conventional collateral alone. This will enable capital to reach farmers, input suppliers, aggregators, warehouse operators, processors, logistics providers, exporters and retailers, thereby unlocking private investment, creating rural jobs, improving farmer incomes, and accelerating rural industrialisation.

Building a solid agricultural value chain finance architecture can become one of the most consequential reforms for achieving the vision of Viksit Bharat 2047.

5. Financing Rural Prosperity: From Farm Credit to Value-Chain Finance

Source: The Hindu

GS-3: Agriculture | Agricultural Credit | Rural Economy | Food Processing | Value Chains

Context

India has achieved major gains in agricultural production, but **higher production alone does not guarantee higher farmer incomes**. A large part of value is created after harvest through storage, processing, transport, branding and marketing. The emerging challenge is therefore to finance the **entire agricultural value chain**, not just crop production.

1. Why Production Credit Is Not Enough

1. **Agriculture is seasonal:** Farmers and processors often need large amounts of working capital during a short harvest period.
2. **Post-harvest gap:** Lack of affordable finance can force farmers to sell produce immediately, even when prices are low.
3. **Different value chains need different finance:** Dairy, fisheries, horticulture and cereals have different cash-flow and inventory cycles.
4. **Value addition is crucial:** Processing, packaging, storage and logistics can generate more income and rural employment beyond cultivation.
5. **Core shift:** Move from “farm credit” to “farm-to-consumer finance.”

2. India's Agricultural Credit System: Recent Progress

1. **Ground Level Credit:** Agricultural credit increased from **₹8 lakh crore in 2014–15 to a ₹32.5 lakh crore target in 2025–26**; ₹28.67 lakh crore was disbursed in 2024–25.
2. **Kisan Credit Card (KCC):** **7.72 crore KCCs** were active, with outstanding loans of about **₹10.2 lakh crore** as of March 2026.
3. **Higher KCC limit:** The crop-loan limit under the Modified Interest Subvention Scheme (MISS) has been raised from **₹3 lakh to ₹5 lakh**.
4. **Collateral-free credit:** The limit for agricultural loans without collateral was raised to **₹2 lakh** from January 2025.
5. **Impact:** A 2026 assessment found that every **₹1 invested under KCC-MISS generated ₹2.30 in net value addition** in agriculture and allied activities.

3. The Next Step: Financing the Agricultural Value Chain

1. **Warehouse finance:** Farmers can store produce and borrow against **electronic Negotiable Warehouse Receipts (e-NWRs)** instead of making distress sales.

2. **Post-harvest infrastructure:** The **Agriculture Infrastructure Fund (AIF)** provides interest-subsidised loans for warehouses, cold chains, processing and other infrastructure.
3. **AIF scale:** By January 2026, **₹80,224 crore** had been sanctioned for **1.5 lakh+ projects**, mobilising about ₹1.28 lakh crore of investment.
4. **Working-capital finance:** Receivables finance and inventory finance can help processors manage seasonal procurement and cash-flow gaps.
5. **FPOs and cooperatives:** Aggregation through **Farmer Producer Organisations (FPOs)** and cooperatives can improve bargaining power and access to institutional finance.

4. Why Value-Chain Finance Matters

1. **Higher farmer realisation:** Storage allows farmers to avoid distress sales and access better prices.
2. **Less post-harvest loss:** Cold chains, warehouses and processing preserve the value of perishable produce.
3. **More value addition:** Processing closer to production centres can retain a larger share of value within rural economies.
4. **Rural employment:** Food processing, logistics, warehousing and packaging create non-farm employment.
5. **Private investment:** Predictable cash flows and better risk assessment can encourage banks, Non-Banking Financial Companies (NBFCs) and private investors to finance rural enterprises.

Centre notifies CAFE norms, tightens PVs' fuel-efficiency targets

Tighter fuel-consumption targets from 2027-32 will also offer credits for hybrids, flex-fuel vehicles, biofuels and efficiency technologies

Jagriti Chandra
NEW DELHI

The Centre has notified the third phase of carbon emission norms for passenger vehicles (PVs), effective from April 1, 2027 to March 31, 2032, under which each battery electric vehicle (EV) will count as three vehicles toward a carmaker's fleet-efficiency calculation, while other cleaner technologies and biofuel-based vehicles will receive specified credits.

Under the new norms, the fuel-consumption benchmark will be tightened from 3.996 litre per 100 km in 2027-28 to 3.3273 litre per 100 km in 2031-32, amounting to an improvement of about 16.7% over the five-year period. The new norms will apply to new passenger vehicles manufactured or



New template: The norms broadly cover passenger cars, including hatchbacks, sedans and special utility vehicles. GETTY IMAGES/ISTOCK

imported for sale in India.

The Corporate Average Fuel Efficiency (CAFE) norms use 1,229 kg as the reference vehicle weight. The earlier concession for small cars weighing up to 909 kg has been removed following a pitched fight that split the auto industry.

The fleet's average fuel consumption will be calculated using the Modified Indian Driving Cycle (MIDC)

and expressed in petrol-equivalent litre per 100 km. For individual models, fuel consumption will be calculated using their notified tailpipe CO₂ emissions. Diesel, LPG, CNG and electric vehicles will be converted into petrol-equivalent figures using specified conversion factors. For electric vehicles, energy consumption will be measured in kWh per 100 km.

6. CAFE-III: Strengthening India's Vehicle Fuel-Efficiency Standards

Source: The Hindu

GS-3: Environment | Energy Efficiency | Energy Security | Automobile Industry | Climate Change

Context

The **Ministry of Power** notified the new **Corporate Average Fuel Economy (CAFE-III) norms** on 30 September 2026. They will apply to new passenger vehicles manufactured or imported for sale in India from **1 April 2027 to 31 March 2032**, replacing the existing CAFE framework. The new regime seeks over **16% improvement in fleet fuel efficiency over five years**, while supporting cleaner technologies and alternative fuels.

1. Corporate Average Fuel Economy: Objective and Institutional Framework

1. **CAFE** regulates the average fuel consumption of a manufacturer's passenger-vehicle fleet rather than prescribing the same efficiency for every model.
2. **Objective:** Reduce fuel consumption, **Carbon Dioxide (CO₂) emissions**, oil dependence and air pollution.
3. **Legal basis:** Introduced under the **Energy Conservation Act, 2001**.
4. **Institutional framework:** The **Ministry of Power** is the nodal ministry, with the **Bureau of Energy Efficiency (BEE)** responsible for the technical and regulatory framework.
5. **Introduction:** First notified in **2017**, with **CAFE-I** applicable from 2017–18 and **CAFE-II** from April 2022.
6. **Coverage:** Applies to passenger vehicles in the **M1 category**, including petrol, diesel, CNG, LPG, hybrid and electric vehicles within the prescribed vehicle-weight limits.

2. CAFE-I: Establishment of the Fuel-Efficiency Framework

Period: 2017–18 to 2021–22

1. **Reference average vehicle weight:** 1,037 kg.
2. **Fuel-consumption standard:** Below **5.49 litres/100 km**.
3. **Primary focus:** Establish a fleet-level mechanism to control the increasing fuel consumption of passenger vehicles.
4. **Technology incentive:** Cleaner technologies, including electric and hybrid vehicles, received incentives through the credit framework.
5. **Significance:** It shifted policy from regulating individual vehicles towards regulating the **overall efficiency of an automobile manufacturer's fleet**.

3. CAFE-II: Strengthening Efficiency and Emission Reduction

Effective from April 2022

1. **Reference average vehicle weight:** 1,082 kg.
2. **Fuel-consumption standard:** Below **4.78 litres/100 km**, substantially tighter than CAFE-I.
3. **CO₂ target:** Below **113 g CO₂/km**.
4. **Technology incentives:** Continued support for **Battery Electric Vehicles (BEVs)**, **Plug-in Hybrid Electric Vehicles (PHEVs)** and strong hybrids through super credits.
5. **Efficiency technologies:** Recognised technologies such as regenerative braking, start-stop systems, tyre-pressure monitoring and improved transmission systems.
6. **Outcome:** BEE's assessment indicates measurable energy and CO₂ savings under the CAFE framework, demonstrating that fleet-level standards can reduce fuel consumption at scale.

4. Rationale for CAFE-III

1. **Increasing vehicle ownership:** Expansion of the passenger-vehicle fleet makes aggregate fuel efficiency increasingly important.
2. **Energy security:** Lower petrol and diesel consumption can reduce India's dependence on imported crude oil.
3. **Climate objectives:** Transport-sector decarbonisation requires sustained reduction in fossil-fuel consumption.
4. **Technological change:** EVs, hybrids, flex-fuel vehicles and other cleaner technologies have expanded significantly since 2017.
5. **Changing vehicle characteristics:** Increasing vehicle weight and diversity require an updated reference framework.
6. **Need for progressive standards:** A continuously tightening framework is required rather than maintaining a static efficiency benchmark.

5. CAFE-III: Major Features and Changes

1. **Progressively tighter target:** The fuel-consumption benchmark declines from **3.996 litres/100 km in 2027–28 to 3.3273 litres/100 km in 2031–32**, representing an improvement of about **16.7%**.
2. **Revised reference weight:** The framework uses a reference weight of **1,229 kg**, reflecting changes in the passenger-vehicle fleet.
3. **Greater technology flexibility:** Manufacturers can pursue EVs, hybrids, alternative fuels and efficiency technologies rather than relying on a single technological pathway.
4. **Alternative fuels:** The framework provides recognition to fuels such as **ethanol-blended petrol, biofuels and Compressed Bio-Gas (CBG)**.
5. **Broader technology incentives:** A wider range of fuel-saving technologies receives recognition under the new framework.

6. **Compliance flexibility:** Manufacturers can use prescribed credit-generation, carry-forward, trading and other compliance mechanisms.
7. **Testing:** The framework incorporates **Modified Indian Driving Cycle (MIDC)** measurements and provides for **Worldwide Harmonized Light Vehicles Test Procedure (WLTP)** reporting as notified.

6. Contribution of CAFE-III to India's Energy and Climate Objectives

1. **Lower fuel demand:** Higher fleet efficiency reduces the quantity of fuel required for the same mobility.
2. **Reduced oil-import dependence:** Lower petroleum consumption strengthens **energy security**.
3. **Lower CO₂ emissions:** Fuel efficiency directly reduces emissions from conventional internal-combustion vehicles.
4. **Cleaner technology adoption:** Incentives encourage manufacturers to expand EV, hybrid and alternative-fuel options.
5. **Automobile-sector innovation:** Stronger standards create incentives for investment in efficient engines, powertrains, batteries and other technologies.
6. **Technology-neutral transition:** India can pursue multiple pathways rather than depending exclusively on EV adoption.
7. **Long-term policy continuity:** CAFE-III carries forward the efficiency objective of CAFE-I and CAFE-II while adapting it to India's evolving automobile market.